Main Factors of Unemployment in Turkey

A Thesis

Submitted to the Department of Economics

and the Institute of Economics and Social Sciences

of Bilkent University

in Partial Fulfillment of the Requirements

for the Degree of

Master of Arts in Economics

by

Gülhan TEKİN

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Gökhan Tekin

I certify that I have read this thesis and in my opinion it is fully adequate in scope and its quality, as a thesis for the degree of Master of Arts in Economics.

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ABSTRACT

MAIN FACTORS OF UNEMPLOYMENT IN TURKEY

Gökhan TEKİN

M.A. in Economics

Supervisor: Assoc. Prof. Dr. Yusuf Ziya İRBEÇ

July 1993, 56 pages

This study attempts to assess the main factors which are affecting unemployment behavior in Turkey. The candid variables are chosen in such a way that some relations have been enunciated for Turkey and for some other countries. This research is trying to analyze the unemployment behaviour mainly in two time periods:

The first scope is the period 1980-1990. The 1980s are characterized for its own features as a new era in Turkey. The relations for this period are searched for ten variables: Unemployment (with one lag), energy supply, credits, money supply, capital investments, investments realized by receiving subsidies from the government, inflation, Gross National Product, real wages and total labor force. Among these ten variables, stepwise variable selection method identified the statistically significant variables and by these variables a GLS model is formed in explaining the unemployment level.

The second scope was the period 1970-1992 and the variables are labor productivity, import-export wedge, real wages and inflation which are used in explaining unemployment rate and level.

It was found finally that capital investments influence the unemployment level on the one side (for the first period), labor productivity, import-export wedge, real wages and inflation affect unemployment level on the other side (for the second period) and the labor productivity and import-export wedge affect also (for the second period) unemployment rate.

Keywords: Unemployment, unemployment level, unemployment rate, stepwise variable Selection Method, Generalized Least Squares Method, energy supply, credits, money supply, investments, subsidies, inflation, Gross National Product, real wages, labor force, productivity, import-export wedge

ÖZET

TÜRKİYE 'DE İŞSİZLİĞİN TEMEL FAKTÖRLERİ

Gökhan TEKİN

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Yüksek Lisans Tezi, Ekonomik ve Sosyal Bilimler Enstitüsü

Temmuz 1993, 56 sayfa

Bu çalışma Türkiye 'de işsizliği etkileyen faktörleri incelemektedir. Bu faktörler Türkiye'de veya başka ülkelerde işsizlikle ilişkisi belirtilmiş olmalarına göre seçilmiştir. İlişki iki periodda aranmaya çalışılmıştır;

Birinci period 1980-1990 yılları arasıdır. 1980'ler özellikleri ile Türkiye 'de yeni bir period olarak belirlenmektedir. Bu periodda ilişki on değişken ile aranmıştır: işsizlik (bir dönem geriden), enerji arzı, krediler, para arzı, sabit yatırımlar, teşvik alınarak yapılan yatırımlar, enflasyon, gayri safi milli hasıla, reel ücretler ve toplam işçi gücü. Bu değişkenler arasında, basamaklı değişken seçimi metodu istatistiksel olarak ilişkili değişkenleri belirler ve bu değişkenlerle işsizliği açıklamak için bir Genelleştirilmiş Enaz Kareler modeli oluşturulmuştur.

İkinci period 1970-1992 arasıdır ve işsizlik seviyesi ve oranını açıklamak için değişkenler işçi verimliliği, dış ticaret haddi, reel ücretler ve enflasyondur.

Sonuç olarak sabit yatırımların işsizlik seviyesini (birinci period için), işçi verimliliği, dış ticaret haddi, reel ücretler ve enflasyonun işsizlik seviyesini (ikinci period için) ve işçi verimliliği ve dış ticaret haddinin işsizlik oranını etkilediği bulunmuştur (ikinci period için.)

Anahtar kelimeler: İşsizlik, işsizlik seviyesi, işsizlik oranı, basamaklı değişken seçimi metodu, Genelleştirilmiş Enaz Kareler metodu, enerji arzı, krediler, para arzı, yatırımlar, enflasyon, gayri safi milli hasıla, reel ücretler, işçi gücü, verimlilik, dış ticaret haddi

ACKNOWLEDGEMENTS

I would like to express my gratitute to Assoc. Prof. Dr. Y. Ziya İRBEÇ for his valuable supervision during the development of this thesis.

I also would like to express my thanks to the Economics Department of Bilkent University for providing me both the necessary background and all the facilities that I needed to complete this study.

Special thanks go to State Institute of Statistics, State Planning Organization and Ministry of Labor and Social Security for providing me the necessary data in the study.

Moreover, I also thank to Dr. Kıvılcım METİN for her kind help in the analysis of the 1970-1993 period.

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1) INTRODUCTION

Unemployment increases everyday and emerges as one of the most crucial problem in the agenda of Turkey. In spite of its criticality, there are not enough studies to put it into a framework and then solve it.

In order to build such a framework, many variables are selected in such a way that their relations have been enunciated in some previous studies, used in other countries for their specific studies or it is thought to be specific to Turkey. As listed on the appendices some variables are found to be statistically insignificant. However, it does not mean that they will not be relevant completely, but they are not much significant. Their possible effect in the future or their aggregate effect may be important and decision makers should not overlook them.

The shortness of the period in the study is a statistical drawback as we have noticed, however we preferred to take the last decade as our focus due to the following reason: the period starting with the late 1970s and early 1980s is a new period due to its own characteristics. The liberal economic philosophy was accepted in these years and it is the main argument of the economists among whom Ahmet KILIÇBAY takes place. Although, not all of the institutions of liberal economic model have been established yet, it seems us to call 1980s as a new period specific with its own features. Moreover, 1980s' being a transition period is the main factor that jeopardize the results of this study to be valid even in the near future, yet we think that some characteristics of the labor market will still prevail for some time of which are included in the study as an overview. Should any person intend to use the results of this study, we warn him to be aware of these points.

In order to take the related variables into consideration a longer period is selected and the second scope is formed to explain the unemployment problem in Turkey. This is the period between years 1970-1992.

Employment and wages are important in a study of unemployment as they are important factors of labor markets. We included overviews of these factors beside our main topic, unemployment.

2) AN OVERVIEW OF UNEMPLOYMENT THEORIES

2.1) Neoclassical Theories

These theories evolved in Europe around 1870 by Walras, Menger and Jevons. They retained their faith in Say's Law that's; supply creates its own demand. A change in

demand for labor should be compensated by a change in real wages. This adjustment process is justified by the assumption -called the classical dichotomy- that the labor market is independent of what happens in the money markets. These theories were not enough to explain the Depression in USA and in other Developed Countries because they simply depend on wage adjustments in a disequillibrium situation -which did not happen in the 1929 in clearing the market-. This failure was explained by the existence of a mechanism preventing the wages to fall. Casson, in 1983, explained that the mechanism could be either unemployment insurance or trade unions.

Cannan E., in 1930, argued that the existence of unemployment brings some benefits as well. As there is unemployment, the people will accept the first job offer and this will reduce the search time.

Clay H., in 1929, argued that unemployment insurance creates a reserve of labor which can be used easily by the employer in peak periods. Another important view of Clay was the trade unions' control on wages as a monopoly in the labor markets.

2.2) Keynesian Theories of Unemployment

Keynes forwarded his theories as a response to Neoclassical theories, as they failed to restore the full employment (during the Great Depression.) Keynes' contribution centered on his attack on Say's Law. His theoretical position was that unemployment arose because of the lack of effective demand for goods and services. This is generally caused by a sudden drop in the marginal efficiency of capital leading to a sharp drop in investment. This decline in investment magnifies by the multiplier causing the economic spiral downwards into recession.

Keynes argued that there was no short term tendency for the economy to move through full employment. Demand for labor can be increased by increasing demand for goods and services. Governments can achieve this in either of three ways:

i. by increasing their own direct input into economy

ii. by cutting taxes and thus increasing consumers' propensity to spend and to save

iii. by causing interest rates to fall via its control of the money markets, so boosting the investment

Each of these methods can be supplemented by multiplier effects. The first two ways involve public borrowing, (which Keynes did not think as important.) Third way is uncertain due to the cunning intelligence of entrepreneurs.

The application of Keynesian Theories failed to supply both low unemployment and relative price stability in UK. The result of full employment was increasing standard of living but economy's slower growth caused inflation.

2.3) Monetarist Theories

Neoclassical ideas on how the economy works were kept alive during the period of Keynesian dominance by a small number of economists in Chicago led by Milton Friedman. Friedman made only one amendment to the Neoclassical ideas concerning the unemployment problem: real wages are handled by using real prices, rather than current prices.

The mechanism works as: a change in employers demand function will result in hiring more workers at higher nominal wages. As the workers have no reason to anticipate a change in the price level, they will interpret the increased wage offers as an increase in real wages and move along their supply curve. The result will be an increase in employment, which will, be only temporary, as employees come to recognize that prices in general have risen and slide back down their supply curve towards their original position.

Unemployment can only deviate below its natural rate, if workers are surprised into thinking their wages to be worth more over the contract period than they actually are. Instead of inflation being a function of unemployment, unemployment is a function of unanticipated inflation. One of the consequences of this is, people can not be surprised indefinitely so there is only one possible long run level of unemployment, that which prevails when inflation is correctly anticipated.

One weakness of the theory is that the labor market clearing approach can tell little about unemployment, which prevails when inflation is correctly anticipated.

The whole basis of the theory is that when demand equals supply there are no unsatisfied buyers or sellers and prices will remain stable. Yet, the market has never cleared in this way: there are always unemployed people and vacancies. Friedman explains this as there are market imperfections and information costs that vacancies and unemployment exist.

2.4) The New Classical Economics

These theories are forwarded mainly by R. Lucas and T.J. Sargent who are inspired from J.F. Muth. Muth proposed that expectations are not adaptive but rational and this idea is applied to analyze the labor market decisions. In this hypothesis deviations from the natural rate would be short lived. The rational expectations revolution admitted that

people did not possess perfect information, at least with respect to future events. But this would not produce lengthy cycles because any errors workers make in forecasting inflation will be random and short lived. Moreover, since the policy initiatives can be forecasted, government is powerless to affect the level of unemployment. However it can affect the rate of unemployment if it acts unpredictably.

A major problem with the original rational expectations hypothesis is that unemployment is clearly not a random variable, but, subject to major cyclical variations.

Sargent, in his study (1976) could not find evidence about the price surprise term in the unemployment equation and this creates the weak point of these theories in explaining the unemployment behavior.

The New Classical Theories are very similar to that of Neoclassical predecessors, but there are two main differences: First one is that the old "classical dichotomy" is abandoned where an interdependent market clearing system is used. The second difference is a response to claims forwarded by K.J. Arrow in 1959. He argued that because every economic agent is assumed to be a price taker and nobody actually knows the market clearing vector of prices and hence no mechanism for changing prices exists, as a result of considerable emphasis is now placed upon incomplete information, uncertainty and the formation of expectations, whereas the Classical and New Classical theories of unemployment can not always exist unless there is

i. Unemployment insurance

ii. The activities of trade unions

2.5) Search Theories of Unemployment

An important development to the original monetarist and the New Classical theories was made in search theories. Interest in these theories began with Stigler's study in 1962 that labor markets are not characterized by perfect information and individuals search to gain information. After this study a series of studies by Phelps, Mortenson and Holt created a new microeconomics approach to macroeconomics. These studies aimed at providing a theory conforming to the fact of simultaneous occurrence of unemployed labor and unfilled vacancies together with negative relation of unemployment versus wage changes.

Phelps' theory presented that under a wage differential, as the unemployment decreases, the quit from firms will increase. So one role of unemployment in this model emerges from its effects on quits rather than any supposed underbidding for jobs. Furthermore, with more vacancies, the firm will be more eager to fill in these vacancies and the

vacancies may affect quits. So, the wage differential that the firm wants to keep up, is a function of unemployment level and number of vacancies.

Holt mainly concerned with providing a theoretical basis for the Philips curve. According to Holt, a labor will accept the jobs which offer wages higher than its reservation wage; a wage declining with the length of search. Holt assumes that the hiring wage will vary directly with his acceptance wage and hence inversely with the time he has been unemployed. Moreover, wage from the last job creates an initial reference for setting the acceptance wage. However, this wage is adjusted with the worker's initial perception of his job opportunities.

Telser in 1973 concluded that if the individual does not know the true distribution of wage offers, the search will provide additional information to adjust his perceptions. An adjustment in the acceptance wage will occur if the search time increases.

Recently, the research has concentrated on employer's side rather than unemployed workers' side of the problem. Mellow in 1982 and Oi in 1983 argued that large employers incur high costs in monitoring employees. That's why employers gain from hiring high ability workers as monitoring costs decrease. Thus, employers search more extensively to find a labor.

A critic to these models has been related with the fact that many people change their jobs without being unemployed. In particular a lot of work has been done on the effects of unemployment insurance or benefits on the duration of job search. As the unemployment insurance decreases the income forgone, the average duration of search also decreases. Search theories have little relevance in explaining unemployment owing to lack of demand for products, but they are found to be useful in explaining that individual's behavior on becoming unemployed.

3) THE EMPLOYMENT IN TURKEY

An overview to the employment is a necessity, for a better view of the position of unemployment in Turkey. This has mainly two reasons:

1) Employment is the complement of unemployment.

2) In Turkey, unemployment is hard to figure out. The surveys, done for measurement of unemployment, have large error margins due to some reasons as; people hesitate to enunciate their situation as unemployed, or blank questionnaires are completed afterwards -according to the status of the parents-etc. that's why unemployment figures are found by excluding employment number from the total labor force numbers.

In addition, like many Less Developed Countries there is employment problem beside unemployment problem. That's some of the people who have a job, get wage from it and work some hours,etc. are far away from getting an income to reach even a subsistence level of living standard or they work in jobs with very small productivity.

As a general view, total labor force makes a small percentage of the total population. This is a problem in productivity that in Turkey around 36-37% of the people have productive power and take care of the rest. The situation in some Developed Countries is better than Turkey, as listed on Table 2. For example the difference of Turkey with USA has been around 13-14% for the 1980s.

An important problem in Turkish employment is the awry distribution of labor among sectors. As it can be seen from Table 3, around 50% of the labor are working in agricultural sectors. This ratio is as low as 3% in USA, or 20% in Spain. The problem in agricultural employment is that the productivity in this sector is very low. As it can be seen from Table 9 there are big productivity differences between agriculture and manufacturing as there is 3 or 4 times higher productivity in manufacturing. That's why, allocating half of the labor to this sector when there is so much productivity difference between sectors is a wrong resource management.

Around 20% of the Turkish employees are employed in industrial sector. This is lower than the distribution in Developed Countries ,eg. industrial sector employment is in USA 25-30%, in Japan 35%, in Spain 33-36% of the total employees. The same scheme repeats itself in service sectors; 25-32% of the Turkish labor works in service sector whereas in Italy around 57% of the labor, in USA around 70% and in Japan 59% of the employment are realized in the service sector. (See Table 4 and 5).

In order to reach to the Developed Countries' level, the labor should be used where efficiency is higher than the agricultural sector.

Agricultural employment is very important in the Turkish Labor Market. The overall employment expanded more when there was an increase in agricultural employment. This can be seen especially in the period 1950-1959. After this period, a modest increase in overall employment is achieved as there was no increase in agricultural employment. A study made by Tuncer BULUTAY (10, page 9) shows that agricultural employment has reached a level of 9 million that he counts it as a 'steady' level. There was a continuous increase in employment in manufacturing after 1950. However, the trend of this increase slowed down in the 1980s.

In an analysis of employment in Turkey, formal and informal sectors must be investigated. This factor is one of the forces that shapes the Turkish employment

According to a view, the dividing line between formal and informal sector is taken as 10 workers. In the Household Labor Force Surveys of 1988, 1989 and 1990, it is found that 47-48% of the labor work in establishments with more than 10 employees. So, half of the urban employment works in small workplaces.

According to the Household Labor Force Surveys, the criteria in dividing the informal sector are as

i) mobile economic units

ii) fixed economic units with less than 5 persons

According to this definition, informal sector is around 40% of the total urban employment which is an important number.

Although, there are thoughts that informal sector is good to utilize the small resources which are infeasible to handle by large scale enterprises, allocating half of the employment in small economic units shows a scale problem that these small units could be aggregated to operate efficiently.

As it can be seen from the Table 1, the population in Turkey has been growing more than most of the Developed Countries. There have been claims that the main reason of unemployment could be named as the high population growth rate. But, it is in evidence that Turkish population growth rate is a considerable amount than the countries listed on Table 1. Fikret BAŞKAYA (12, page 294) explains this claim and asserts that the main problem is not population growth rate, but small investment rate, failing to employ the new entrants to the labor market.

According to this scheme there must be net investment, which is not less than the population growth. In Turkey, most of the investment is realized by public sector for the 1970s and till mid-1980s. Government has been the largest employer in Turkey. Yet, beginning with the privatization efforts, public investment slowed down. This will obviously decrease employment in the future.

The error margin has been important in the data about employment. This is a crucial problem in decision making about employment policies. In order to obtain correct series about labor market, a study by Tuncer BULUTAY is started at SIS. This study takes place in an ILO project. The objective is to extend the 1988, Household Labor Force Survey results back to 1923. Although, the series are described to have potential for further refinement, the resulting series are important in policy making and for further scientific study.

Migration is an important concept in labor market. The market clearance in the form of supply and demand. Migration can be divided to two: (i) Internal Migration (ii) External Migration

Main Factors that determine migration can be classified as:

Push of the sending areas, Pull of the receiving places, Intervening obstacles and Personal factors.

The pull of the receiving places is effective due to the fact that most of the investments have been realized. This increased the demand which induced people to migrate to these metropolises. The increasing importance of the manufacturing industry and the services sector lowered the population in small settlements. The migration has multiplier effect in such a way that capital moves in the same direction with the labor, i.e., to large cities. This development brings out an increasing imbalance in population between the place of birth and the migrated places. The gap, getting larger, pulls more people everyday.

Push factors are mainly the growth of population. The decreasing possibilities of employment in the rural areas push more people to migrate. Another push factor is a result of the Law of Ravenstein, that the relatively successful people of the villages come to towns, and towns to cities. As it can be seen from Table 7 urban population have always been increasing whereas the relative importance of rural population has been decreasing. According to SPO calculations, the cities which get net migration are as Adana, Ankara, Antalya, Bursa, İçel, İstanbul, İzmir and Kocaeli which are major industrialized cities in Turkey.

4) WAGES

An important indicator of labor markets is wages. It is the essential to have a good understanding of wages in order to analyze in details the phenomenon of unemployment.

The first thing to notice about wages in Turkey is their general increase through time, as it can be seen from Table 10. Real wages are in 1989 3-5 times higher than the real wages in 1950. The increase of the real wages has been greater than the increase in productivity. When we consider the Developed Countries, the increase of real wages has been almost equal to increase of productivity. The scheme is same in most Developing Countries. (See 29, page 52-56)

A fundamental feature of Turkish economy is the great productivity differences between sectors. As it can be seen from Table 9, the product per employee in agriculture is much lower than in manufacturing: The difference is around 4 times of more productivity in

manufacturing. More crucial point is that there is almost no change in this ratio that it was 4.58 in 1950 and 5.05 in 1967 which corresponds to the case that there is no convergence between sectors, but according to some economic theories this should have already happened till now. But such a development can be explained by the great number of people still working in agriculture and by the fact that the migration to the manufacturing intensive regions has been slow.

However, agriculture is universally the least productive sector. Industry has the highest rate of productivity in all country groups except low-income Africa. In the 1980s, the ratio of agricultural sector output to industrial sector output emerged to be 2 in Tunisia, 1.5 in Algeria, 3 in Poland, 2.25 in Italy, 3.1 in Germany, 2 in South Korea and 7 in Taiwan. (See 32, page 25)

Another characteristic of the labor market is the continuous decay of the wages in the government sector relative to the private side. The government sector wages have always lagged the wages in the private sector. The difference increased enormously during the 1980s.

The size of the firms is an important determinant for wages and productivity. The wages increase as the firm size gets larger. This trend is reflected also in the productivity. In the large firms the productivity is much more than in the small firms. The higher efficiency of production in large firms may be due to: more physical and human capital of large firms and more importantly due to their monopolistic power in the markets.

The effects of trade unions can not be neglected by treating the wages. These institutions are effective especially in minimum wage determination that have impact on wage stickiness. In 1990 , the unionization was around 51-55% according to Ministry of Labor and Social Security. In a recent study by Tuncer BULUTAY, union wages are at least 30% higher than comparable nonunion wages. The share of the employees determining the wages by collective bargains with respect to total employment in services and industry has an important share differing from 5 to 20%. (See Table 8) In some companies wages the government sector wage increases are taken as the base of their calculation. That's why, contract theory might be effective in explaining the wage behavior in Turkish Labor market.

Neoclassical model of economy asserts that the demand and supply clears the market and determines the single wage prevailing in the markets. Also, it uses the assumption of homogenous labor. As it can be realized by using the arguments listed above, neoclassical model fails to explain the Turkish Labor market completely, as; there are great wage and productivity differences between agriculture and manufacturing sectors.

Besides, there are many excess labors, but the migration or movements are not enough to equalize wages.

The Keynesian model fails to explain also the unemployment in the aspect of the validity term. For years, there has been a steady unemployment around 10% in spite of the frequent implementation of fiscal policies. Nevertheless, Keynesian theories asserts that the disequillibrium, so unemployment, would be of a short term matter and the long run behavior would be a full employment. The continuous and constant -even increasing- unemployment term, is not the thing that will happen according to Keynes. As far as hidden and open unemployment is concerned, the effectivity of fiscal policies seems questionable.

5) LEGAL STATUS

The Ministry of Labor and Social Security and the Ministry of National Education have have been entrusted since 1984, with the coordination of activities of employment, labor market and education. The activities for increasing the number of qualified labor force have been emphasized during the recent years. Programs for qualifying the labor force, especially the young labor joining to the market, is organized by the Labor Placement Office. The effectivity of these programs can be questioned as the number of people attending these programs have been around 5,000 at maximum. An important one of these programs was qualification courses for Lycee graduates, which is called LİMME in Turkish. However, claims for the failures of these programs are forwarded on various bases.

Unions

Unions are important in Turkish Labor market. Their influence on wages is considerable. According to Ministry of Labor and Social Security data, unionization ratio was 54-56% in 1984, 62-65% in 1985-1990. This number of labor is obviously decisive in the labor market.

The activities of unions have been regulated by laws. The main legal environment is as mentioned in the below paragraphs:

Collective bargaining and union activities started by the approval of the Law in 1947 which brought a new legal dimension to the labor-employer relations. (1947: İşçi ve İşveren Sendikaları ve Sendika Birlikleri Hakkında Kanun, No: 5018) The lack of articles in the Law, about strikes and lock-outs, union activities did not develop.

The effectivity of unions started in 1963. ("1963: Sendikalar Kanunu, No: 274", "1963: Toplu İş Sözleşmesi Grev ve Lokavt Kanunu, No: 275") The activity level of unions is revised and constrained in 1972, that's, some union rights are removed by this act.

During the period 1980-1983, the practice of directing the labor market by the Supreme Arbitration Board (Yüksek Hakem Kurulu) is applied. This eliminated the strikes and lockouts in this period. The validity of this commission is removed in 1984 by the transition to the Collective Bargain system.

The 1982 constitution, organized the union rights and responsibilities in a detailed manner. As a gist, it was prohibiting the unions to act in politics, supporting political parties and professional institutions.

The Union Law (1983: Sendikalar Kanunu, No: 2821), prohibited unions to be involved in trade and forbidden meetings in the union facilities -which are not related to union activities-.

The data of contracts are listed on Table 8. This shows the place of contracts. As it is in evidence, contracts are important in Turkish Labor Market and there is a considerable increase especially in strikes in the late 1980s.

6) UNEMPLOYMENT

In Turkey, unemployment has been one of the most crucial problems and it should be solved in the shortest time possible. The unemployment rate which seems to be in average more than 10% is an obvious indicator of the difference and deformity of the labor supply and demand. This corresponds to approximately 2 million of people in the 1990s. This is an important number because many people can not find a job.

The situation in employment is valid in the unemployment problem too; the official data about unemployment do not give the correct result in spite of the positive endeavors made by Household Labor Force Surveys. Moreover, the Surveys are not able to identify the hidden employment in agriculture or number of discouraged labor quantity. There are claims when the hidden unemployment is considered, the unemployment rate would be around 15%. Governments have been fighting with this problem for years and the scheme can be seen in the time order of Development Programs which have been prepared beginning from 1963. A closer look to these plans shows that these plans could not reach to their targets.

Ist 5-year Development Program Period

This program was prepared primarily to accelerate the economic growth and unemployment was set as a secondary aim. The surplus labor in urban areas was emerging as hidden unemployment at the beginning, and it was later turning into open unemployment in the rural areas. By this assumption, it was planned to prevent the internal migration by making radical changes in the rural areas.

The employment view in this plan focused mainly on 4 points: solving the unemployment problem, making possible that employed people should gain new skills, emphasizing the use-the-skilled-person-for-the-job principle in new employment opportunities, creating social dynamics and stabilizing the distribution of the population among sectors. The corresponding policies determined to reach the aims listed above can be summarized as follows:

1) In order to decrease internal migration to cities, the labor force should be employed in nonagricultural activities in the rural areas.

2) Giving priority to labor intensive sectors.

3) Making research and feasibility studies on labor intensive technologies -especially on the construction sector.-

4) Sending surplus labor to the labor scarce countries, i.e., external migration

5) Implementing a low population growth policy

6) In case the plan fails in this unemployment dimension, a higher GNP growth rate should be planned in the next programs.

The failure of this plan is obvious as far as the labor market policies concerned; the surplus labor percentage was 8.08% in 1962, 8.53% in 1963, 8.98% in 1964, 9.36% in 1966, 10.14% in 1967 and 10.86% in 1968. In 1968, the total labor supply was 13,262,000 and demand was 12,732,000. The planned increase of employment in agriculture and service sectors was not satisfactory, but employment in manufacturing industry increased more than planned.

IInd 5-year Development Program Period

The target to increase the National Income was again used in this plan and increase of employment was again kept as a secondary target. There was a common thought that unemployment problem would be solved spontaneously by the economic growth. In this

period there was less increment of labor demand than the supply, but the increased external migration decreased the effects of the large labor supply. Opposite to the first program, the principle to give priority to urban area development principle was accepted

In the program, the same policies were used to decrease unemployment.

During this period (1968-1972) total labor supply increased from 13.461.000 to 14.317.000 in 1972 whereas in this period the demand increased from 12.886.000 to 13.567.000 in 1972. This corresponds to an unemployment rate of 11.17% in 1972.

The prediction about hidden unemployment was used for the first time in this plan. It was 9.9% in 1967 and then decreased continuously to 1.1% in 1972.

In this period, the external migration reached to 655,000 till 1972 and this has reduced the labor surplus in Turkey.

IIIrd 5-year Development Program Period

In this period, the emphasis given to unemployment problem decreased relative to the first and second development program periods. In the plan, a high GNP growth in the succeeding years could eliminate the problem completely. A long term solution for unemployment was accepted beside re-distribution of the income among social groups. In this period, the oil shock caused a crisis in the economy.

The unemployment increased from 12.9% in 1974 to 13.9% in 1978. In this period, the share of agricultural employment decreased slightly whereas, industrial and service employment increased. Another important feature of the period is the increasing number of people registered by the Labor Placement Office and the importance of this organization has increased (: 134,367 in 1977, 172,527 in 1978).

IVth 5-year Development Program Period

An employment policy, consistent with manufacturing and technological policies was planned. Employment in the specialized area, in-house training, stabilizing the distribution of labor force among regions and sectors are the important topics in this program. The solution of the unemployment problem was prepared for a longer time than the program period.

Unemployment increased from 7.8% in 1979 to 12.1% in 1983. In this period, the employment in service sector increased more than agricultural and industrial sectors in absolute terms. This was also the beginning of the service sector employment boom.

V^{th} 5-year Development Program Period

One of the targets in this program, is to increase employment and decrease the young unemployment among young people. The unemployment policy consists of employment by increasing growth rate, developing ways to utilize the resources in employment, giving priority to the elimination of open unemployment in solving the young unemployment problem and organizing ways to train the youth for letting them gain new skills.

In this period, unemployment decreased from 11.8% in 1984 to 9.8% in 1988. (See Table 13) Employment opportunities were mainly created in the service sector, especially in transportation and construction business.

VI^{th} 5-year Development Program Period

In the program, the relative share of agricultural employment is aimed to be 46.2%, industry 17.5% and services 36.3%. That's, the sectoral distribution was the main important goal of the program. The unemployment rate should be decreased also from 10.1% in 1990 to 8.7% in 1994. However, the current unemployment rate is 11.5% in 1991 and 11.8% in 1992.

In this program, the principles differ from the previous ones as enterprenuership, small and medium sized establishments are supported. In addition, the information systems should be implemented to increase the efficiency in the market. Private companies and Labor Placement Office have to operate in order to achieve this goal. SPO intends to ease the problems of disabled people and old prisoners in this period. The part time working will be supported according to this plan. The standardization of labor market data is another goal of this program.

Unemployment rates of some OECD countries are listed in Table 13. The average rate is 7.1% in 1991 in OECD area, whereas it is 11.5% in Turkey. With this rate of unemployment Turkey follows Spain. This shows the importance of the problem where Turkey plans to compete with these countries' economic power. However, the Turkish data do not include the hidden unemployment. Hidden unemployment has been calculated by SIS since 1989 and when it is included, the unemployment totals around 16% and this percentage shows the largeness of the problem with respect to Developed Countries. Moreover in Table 13, the unemployment among foreign workers are included in the Developed Countries' data so, their unemployment figures seem so high.

The search time of unemployed people has begun to be gathered by the Household Labor Force Survey. According to this study, most of the people find a job in less than one

year. (See Table 14) Although a large number of people search and find a job in less than one year, half of the unemployed people, it takes as long as one or two years. Labor Placement Office can be effective in decreasing this search period.

The number of people seeking a job for the first time amounts a significant number; almost half of the unemployed people that's around one million people. This means that the number of people who are changing their jobs makes around 700-750,000. If it is assumed that people typically search for a job for the first time is in 20-24 ages; in 1980 and 1985 population censuses, this age group has counted for around 10% of the total population and 25-27% civilian labor force, however, this age group counts for half of the people looking for a job. This may mean that education system fails to give enough notion to their graduates.The employers ask therefore for job experience insistently.

Although female labor employment decreased in Turkey, the ratio of female labor to total labor force is more than in Less Developed Countries and even some of the Developed Countries. This is basically, due to the high ratio of female labor force in rural areas where around 90% of the women work as an unpaid family worker. Furthermore, the growth of population in the cities and industrialization force the women to take part in the labor market.

The ratio of working female labor force is around 50% of the total female population. This ratio is one half or one third lower than in many other industrialized countries.

The highest participation rate of female labor force is in 40-44 age group in rural and 35-44 age group in urban places where the lowest participation is in 25-29 age group. The latter age group corresponds to the marriage and birth years sociologically: the women find her primal role in her family, has not yet digested her role in business life. In some surveys done among female labor force, it turned out that women work due to economic necessities, not for achieving a social role in the society.

The population structure is important in analyzing the unemployment. The growth rate of the population has increased from 1.702% in 1927 to 2.519% in 1980. Between 1980 to 1985 the rate was 2.488% and between 1985 to 1990, it was 2.171%. (SIS, Statistical Yearbook 1990) It is an important number when the yearly average population growth rate of Belgium is 0.3%, of Greece is 1.1%, of Japan is 0.3%, of UK is 0.3% and of USA is 1.1% for the 1980s. The population growth rate in Turkey is very high with respect to Developed Countries. This creates a dilemma when Turkey is looking for solutions to unemployment problem.

An indicator that the unemployment will continue to be a problem, lies in the fact that Turkey has a very young demographic distribution. The people who are under 15 years

old are around 35% of the whole population for the 1980s. The same age group is 18% in Belgium, 21% in Canada, 15% in Germany, 18% in Japan. The 15-64 age group makes approximately the same percentage of total population for Turkey and other OECD countries. Then, the Turkish age group 65 and over makes smaller percentage of the population than other OECD countries. According to projections done by OECD shows that the age group under 15 years will decrease from 36.6% (in 1980) to 25.5%(in 2030). The age group 15-65 will increase to from 59.3% (in 1980) to 64% (in 2030). This means that more people will be unemployed unless more investments are realized. The reverse process will occur in the Developed Countries. The share of the passive people (under 15 years or over 65 years) will increase. This will increase the cost of social security and there may be shortages in the labor market unless technology is substituted for labor. (See İRBEÇ, 1992)

7) PART-TIME WORKING

An important phenomenon in labor market is part-time working. This type of labor is supported in many Developed Countries. The regulation in many countries is same for social security opportunities as full time workers.

The benefits of part-time working are identified as follows:

The quality and efficiency of the work increases, as observed in Developed Countries. (See CENTEL, 1992 and İRBEÇ, 1989)

The unemployment in depressions are smoothed that more people are employed, so that, no accumulation of unemployed labor in these times. Besides, it is an effective tool in reducing unemployment.

The employers have the opportunity to smooth their production better in peak times.

The main objection to part-time working is that the costs increase around 3% when part-time workers are employed. (See CENTEL, 1992)

The definition of part-time working is prepared by UN and ILO. UN Commission of Women, in 1953, defined part-time working as: " working a considerable amount less than the average weekly or daily working hours." This definition is approximately accepted by ILO in 1965. In spite of this common base, the working hours needed in order to be classified as a part-time worker, are different for countries. That's, the part-time working hours vary from 20 to 30 hours in a week.

Many countries use part-time employment in fighting with unemployment. An identifiable success is, e.g., in Switzerland's low unemployment rate of 0.5% in 1990 where part-

time workers as a percentage of total employment is 23.2%. This is a clear indicator of the importance of part-time employment as a tool in fighting with unemployment. (See Table 15) An important feature of part-time working as its practice in the Developed Countries, they use it especially for fighting with female labor force unemployment. As it can be seen from Table 15, female employment ratio in total part-time employment is 65% to 90% in 1990 whereas part-time employment as percent of total female labor force employment is from 8% to 45%. The observation can be attained that some significant success is attained in fighting with male employment, as around 15% of male employment are of part-time in Netherlands.

As it can be seen from Table 17, in the Developed Countries the part-time working is used more in service sector than agricultural sector or industrial sector.

Data about part-time working has not been gathered in Turkey, so, it is not possible to describe the situation correctly. However, CENTEL states that part-time working are not used frequently in Turkey where full time employment is preferred. This basically depends on two factors: Turkey is not a Developed Country, whereas part-time working is used intensively in those countries. This type of working is preferred mostly among female labor where Turkish social structure is such that the primal role of women is in her family.

Another difficulty for this type of working is the lack of regulation for its implementation in Turkey. The importance of this tool has not been recognized very much among decision makers. The Labor Law lack to recognize a situation that a labor might work less than the regular 45hrs/week. (See Labor Law, article 61) Although, SPO stated that the regulation would be supplied in the VIth Development Program period, the necessary changes in the Law have not been realized yet.

Women prefer part-time working due to their roles in their families. As the female participation in labor force increases, the need for part-time working, so the need for the regulation for it, will increase.

8) INVESTMENTS

In 1990 the capital investments' ratio to the GNP was around 20.3% in India, 24.3% in France, 21% in Germany, 21.9% in Greece and 31.7% in South Korea. These ratios indicate that Turkish investment share in GNP is almost equal to some Developed Countries, but the problem is that the investments do not create enough employment opportunities to cover the labor force growth.

In the 1980s, the capital investments decreased, though recovered in 1990s. The decrease of capital investment is mainly due to the fact that government aims to constraint its activities. For years, government has been the most important employer in Turkey. There has been -though they are slow- privatization efforts. This, obviously, will mean some layoffs from these State Economic Enterprises. The continuing efforts will cut some jobs in this largest employer of the economy which will increase unemployment -at least in the short term-.

Moreover, most of the public capital investment is not of employment creating and labor intensive type, but, mostly, highway construction, telecommunications, utilities,... type areas. This is another factor which increases unemployment.

The Turkish entrepreneurs are not willing to make new investments. There is more return on other economic activities. The high return from stock exchange operations, return from foreign exchange parity changes, return from treasury bonds are much more than the profits of many enterprises in manufacturing and service sectors.

For years the real interest rate on saving deposits has been positive and much more than many Developed Countries. This rate has been alluring capital to deposits or to activities which have even higher return -than saving deposits- like stock market operations or usury. This fact has been enunciated by some presidents of chambers (like Nurullah GEZGİN, Memduh HACIOĞLU of İstanbul Chamber of Commerce) This is unfortunate for the unemployment scheme since employment creating investments are less realized.

The high interest rates allure so increase the household savings to increase their savings, it also increase the interest burden by new investments. The high interest rates charged to credits are dependent on high commission rates, tax, fund cuts, high disponsibility rates and high amount of bad debt beside high saving deposit rates. The credit rates are another factor which demotivates entrepreneurs from making new establishments.

9) METHODOLOGY

9.1) The Variables Considered in the Study: Scope; 1980-1990

Regression analysis is used due to its easiness. The variables are selected according to the observations about unemployment behavior in Turkey or in other countries. Data collected are from the period 1980 to 1990 due to the selected scope.

Total Labor Force available in Turkey (LABFORCE*): This variable is selected to see the effect of population growth in the labor market.

Data are obtained from State Institute of Statistics' Household Labor Force Survey.

Credits available for the economy (CREDITS*): These are real values credits available for the private or public enterprises, as it is an important way of financing for companies. The total credits of the Deposit & Money Banks and Investment & Development Banks is taken for this variable.

Source of the data is State Institute of Statistics which had gathered them from Turkish Central Bank.

Inflation (INFLATION*): There has been an important place of inflation in unemployment theory, so this variable is used. The data are subsisted from yearly percentage changes in Wholesale Price Index. This choice depends on the reason that the purchases of the enterprises are generally on a wholesale basis and it will denote the effects of the changes in the materials' price level.

Specifically, the index takes 1981 as the base year, id est, inflation= 100. (in order to reach to the 1980 datum, 1980 figure with respect to 1960 prices is interpolated)

Unemployment (UNEMP*): Unemployment figures are taken from State Institute of Statistics which are resulted from the Household Labor Force Survey. The unemployed person definition is as; all people, 12 years of age and over who were not employed (neither worked for profit, payment in kind or family gain at any job even for one hour, or with any job attachment) during the reference period who have taken specific steps to obtain a job during the last six months and were available to start work within 15 days.

Energy (ENERGY*): This variable is used to check the validity of the claim that lack of energy is one of the most important problems of the enterprises and de motivates investments.

Data are obtained from SIS which gathered them from Ministry of Energy and Natural Resources. The unit of measure is 10^6 kWh.

Gross National Product (GNP*): This variable is selected for checking the effect of aggregate demand.

Data are obtained from SIS and the unit of measure is 'million TL' at constant prices of the year 1987.

Money Stock Measures (M1): Narrow definition of real money supply is used to check the effect of money, so the implications of monetary policies on unemployment. The narrow definition of money supply includes the currency in circulation plus commercial and savings sight deposits.

The source of the data is SIS which gathered them from Central Bank.

Investment (FAINVEST*): This variable is used to see the effect of capital growth in Turkish unemployment. The capital type investment is used which excludes the change in inventory from the total investment done in Turkey.

A substitute of capital type investment is taken as the whole investment done by receiving subsidies from the government. This alternative is also used for questioning the effectivity of subsidies in reducing unemployment where one main goal of these subsidies is reducing unemployment. (INVINCEN*)

Both of the variables' data are collected from State Planning Organization.

Real Wages (WAGES*): This variable is used for checking the effects of wages as, in all of the approaches wages are used in explaining the unemployment and employment.

The data are obtained from SIS.

(*: as used in the regression models)

9.2) Regression Results: Scope; 1980-1990

OLS and GLS are used in the study. In the first phase of the study a stepwise variable selection method is used in order to identify the significant variables which are aforementioned. The one period lagged value of unemployment was among the candid variables owing to the reasons stated in the following paragraph. In the end, the relevant variables are found to be as the intercept term, the lagged value of unemployment variable and the capital investment. .

Existence of autocorrelation will jeopardize the efficiency of estimation. The Durbin-Watson test statistic emerged to be 2.302 (greater than 2). In order to identify which lag creates the autocorrelation, simple linear regressions are done among unemployment and its lagged values. That's;

$$UNEMP = \Phi \cdot UNEMP(i)LAG + \varepsilon \qquad i=1,2,3,...10$$

equations are formed and at the end the alternative hypothesis,

Ho: $\Phi = 0$

Ha: $\Phi \neq 0$

turned out to be significant for one-lagged value. (See Table 21)

The results of the model are listed on Table 22.

In the tests of the variables t-test is used for $\alpha = 0.05$ and degrees of freedom = n - k= 11 - 4= 7.

Residuals in the regression has a mean very close to zero and for these residuals the distribution fitting results in Normal Distribution. This validates the interference results -which are done by using Students t-distribution.-

In order to see whether or not the model is sufficient, out of sample calculation is done. Owing to he lack of data or incomplete data of 1992 for variables, calculations are done only for 1991. The result seems that the model may be effective powerful in explaining the general behavior of unemployment. The calculation is as:

UNEMP(1991)= $\alpha + \phi$*UNEMP1LAG + β*FAINV = 1339.544831 + 0.586539 . 1800 - 0.037996 . 18277.8= 1700.86

where the realized unemployment in 1,750,000 and the difference is around 50,000 people.

The lack of inflation in the resulting equation indicates the failure of monetarist theory where money does not exist either which is indicating classical dichotomy may be valid in Turkish Labor market with respect to these dimensions of the stated theories.

9.3) Methodology: Scope; 1970-1992

There have been other studies for foreign countries in order to explain unemployment behavior. Using the methodology of these studies gave strong indications for Turkish Labor Market. In detail, the unemployment level is chosen as the dependent variable of the regressions. The logarithm of this variable is used like other variables in order to linearise and decrease the effect of the effect of small fluctuations in the observations. Beside unemployment level, unemployment rate is chosen as the dependent variable and tried to be explained alternatively.

The market should have a price mechanism such that the wages should be equal to productivity. However, lacking this scheme will indicate us the deformity of the market. Beckerman and Jenkinson (1986) uses this argument in explaining unemployment by using the productivity figures. The productivity is defined as; total production (represented by GNP) divided by total number of employed people.

The real wages data are obtained from SIS, Statistical Indicators. The deflator is the consumer price index which is taking 1968 as the base year.

The inflation figures are taken from Uygur, 1990 which are calculated from the GNP deflator. We think this figure represents the global behavior better than other indices, whereas Layard and Nickell (1989) uses such an inflation figure.

According to Layard and Nickell (1986), the imported goods represent the productivity of foreign labor whereas, exported ones show the productivity of the domestic labor. This difference of them shows the labor advantage of the country, so, it will be helpful in explaining the low demand to Turkish Labor. The imported and exported productivity is represented by the export and import price indices. The "wedge" between them is the logarithm of the ratio of export price index to import price index.

The theoretical models are as:

$$UNEMPRATE = \alpha + \kappa * LOG(PRODUCTIVITY) + \beta * LOG(INFLATION) + \gamma * LOG(EPI/IPI) + \phi * LOG(REALWAGES)$$

$$LOG(UNEMPLEVEL) = \alpha + \kappa * LOG(PRODUCTIVITY) + \beta * LOG(INFLATION) + \gamma * LOG(EPI/IPI) + \phi * LOG(REALWAGES)$$

The results are listed on the Tables 24-27.

Two regressions are done for each of the equations. In the second regression, the statistically significant variables of the first regression are used. In the regressions no autocorrelation exists and the test interference using t-distribution gives valid results as the mean of the residuals are close to zero, no residuals lie out of three sigma intervals taking zero as the mid of the interval, and the distribution fitting gives normal distribution indication.

When trend is removed from the unemployment level the regression fails to explain the observances as the R-Square value emerges to be as 4%. That's the model

$$LOG(UNEMPLEVEL-\lambda) = \alpha + \kappa * LOG(PRODUCTIVITY) + \beta * LOG(INFLATION) + \gamma * LOG(EPI/IPI) + \phi * LOG(REALWAGES)$$

λ: the trend term

When the unemployment rate is used for explaining the observances, the R-Square turns to be much lower than the case unemployment level is the dependent variable.

In the results of the study, the unemployment level is positively affected by productivity, the foreign trade wedge, and real wages. The unemployment rate is affected positively by productivity and the wedge.

In the 1970-1992 period, the resilts are such that the unemployment level is positively affected by productivity which is consistent with the findings for middle-income and

high-income countries according to Squire, (See 29, page 53) but the results are not same with low-income countries in which productivity is not effective on unemployment.

Another variable affecting unemployment is real wages and this is consistent with the results for Developed Countries' case that G. Haberler (See 31, page 64) explains this with wages' being sticky. This is the general case in the Developing Countries as well -with some exceptions like Pakistan (negative relation), South Korea (ineffective).- In the first study real wages are not effective on unemployment for the 1980s which shows a behavior consistent with the countries like South Korea.

Foreign trade wedge is affecting unemployment positively and this is consistent with the findings of Layard and Nickell (1986) for United Kingdom. This shows that higher prices of exported goods than imported goods leaded unemployment in Turkey due to low competitive power of Turkish labor in the global market. It is not possible to compare this relation with other countries as there has not been studies which consider the foreign trade wedge in explaining unemployment.

Inflation does not affect unemployment in Turkey (for both of the models.) This does not fit to the results of the models prepared for the Developed Countries but some Developing Countries -like Israel, Uruguay- has such a behaviour,ie, inflation does not affect unemployment.

In the first model the capital type investment emerged to be inversely related with unemployment. As aforementioned, there has been claims that the main problem in Turkish unemployment was small amount of investments rather than population growth -so labor force growth.- This claim is supported by the existence of capital type investment variable and non-existence of labor force variable.

10) OFFERED SOLUTIONS TO UNEMPLOYMENT PROBLEM IN TURKEY

In order to eliminate the unemployment in Turkey, a high growth rate is needed to create enough jobs for population growth. The growth must be attained especially in manufacturing industry and service sector where higher efficiency is achieved than the efficiency achieved in agricultural sector. As it can be observed from Table 3 and 4, many Developed Countries have such a distribution of labor among sectors. Furthermore, in order to eliminate and use the hidden unemployment in rural areas, priority must be on small cities located near rural areas. The incentives have been in this direction, however due to the lack of control mechanism the subsidies given to such investments have been used not in these areas, but in activities like usury or investments in Western Regions of Turkey.

Moreover, part time working must be supported as in many Developed Countries. Recently, France accepted such a policy in October 1992. The idea of part time working is to share the jobs so two people will share the wages and the work. This will be a beginning of solution to the problem, as unemployment will decrease .

The population growth has been high as it can be observed from Table 1. A growth plan should be implemented seriously. There has been acceptance of the tenet "population is power," but now it is clear that Turkey has not been able to use the increased population productively. The unemployment increased hidden and disguised unemployment amounted to an important number, people do marginal jobs,etc.

There has been doubt about the effectivity of Labor Placement Office. Due to this doubt, people do not register to the Office but search jobs with his own efforts. This increases the search time or even discourages people from being unemployed. In order to decrease the search time, and number of unemployment, Labor Placement Office must be supported to play its auctioneer role effectively in the labor market.

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TOTAL POPULATION OF SOME OECD COUNTRIES

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
USA	83	83.9	84.7	85.7	86.8	87.7	88.6	89.4	90.3	91.1	92	93	94.1	95.2	96.2	97.2	98.1	99.1	100	101	101.9	102.9	104	105.1
JAPAN	82.7	83.7	84.7	85.9	86.7	87.9	90	91.2	92.4	93.4	94.3	95.2	96	96.7	97.4	98.1	98.8	99.4	100	100.6	101.1	101.5	102	102.3
GERMANY	97.2	97.5	98.4	99.4	100.5	101.1	101.6	101.7	101.3	100.8	100.6	100.5	100.5	100.9	101.1	101	100.7	100.2	100	100.1	100.1	100.7	101.7	103.6
AUSTRIA	97.6	98.1	98.5	98.8	99.2	99.8	100.4	100.5	100.3	100.1	100.1	100.1	99.9	99.9	100.1	100.2	99.9	99.9	100	100.1	100.2	100.5	100.9	102.1
BELGIUM	97.2	97.6	97.8	97.9	98.1	98.5	98.8	99.1	99.4	99.5	99.6	99.7	99.8	99.9	99.9	100	100	100	100	100	100.1	100.6	100.8	101.1
FRANCE	89.8	90.5	91.2	92	92.9	93.7	94.5	95.1	95.5	95.9	96.3	96.7	97.2	97.7	98.2	98.7	99.2	99.6	100	100.4	100.8	101.3	101.8	102.3
GREECE	87.7	88	88.3	88.5	88.9	89.5	89.9	90.2	91.1	92.3	93.7	94.9	96.1	97.1	97.9	98.6	99.1	99.7	100	100.3	100.5	100.7	101	102.1
ITALY	92.2	92.8	93.3	93.9	94.6	95.2	95.9	96.5	97	97.5	97.6	98.2	98.5	98.8	98.9	99.1	99.5	99.7	100	100.2	100.4	100.5	100.7	100.9
PORTUGAL	88.4	88.5	88	87.5	87.1	87.2	87.1	89.6	94	94.9	96	97	98.1	99.1	99.5	99.7	99.9	100	100	100	99.9	99.8	99.7	99.5
SPAIN	85.3	86.3	87.2	88	88.8	89.6	90.4	91.3	92.2	93.3	94.4	95.5	96.4	97.1	98	98.6	99.2	99.6	100	100.4	100.5	100.8	101	101.2
TURKEY	65.2	66.8	68.5	70.3	72.1	74	75.9	77.8	79.6	80.8	82.6	84.4	86.3	88.3	90.5	92.8	95.1	97.5	100	101.9	104.1	106.5	109.1	111.5
EUROPE	89.1	89.8	90.6	91.3	92.2	93	93.7	94.3	94.9	95.3	95.8	96.4	96.9	97.5	98.1	98.6	99.7	99.5	100	100.5	100.9	101.6	102.2	103.1
OECD	85.8	86.6	87.5	88.4	89.4	90.3	91.3	92.1	92.9	93.5	94.2	95	95.7	96.6	97.3	98	98.7	99.3	100	100.7	101.3	102.1	102.9	103.8

Source: OECD

1985: 100

Table 1

TOTAL LABOR FORCE

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
USA	47.3	47.7	47.9	48.1	48.2	48.6	49	49.5	49.8	50.1	50.5	50.3
JAPAN	48.3	48.4	48.5	48.7	49.4	49.4	49.4	49.6	49.8	50.3	50.9	51.7
AUSTRIA	41.3	41.4	41.9	43.6	43.6	44.5	44.4	44.7	45.2	45.2	45.3	45.7
SPAIN	36.3	36.1	35.9	36.1	36.3	36.3	36.3	36.7	37.9	38.6	39	39.4
GREECE	35.3	35.8	37.8	38	39	39.1	39.2	39	38.9	39.6	39.5	39.1
TURKEY	36.3	36	35.9	35.7	35.6	35.5	35.3	35.3	35.1	37.4	37.4	37.5
EUROPE	42.1	42.3	42.5	42.7	42.7	43	43.2	43.3	43.7	44.2	44.2	44.3
OECD	44.8	45	45.3	45.4	45.6	45.9	46.1	46.4	46.8	47.2	47.4	47.6

As percentage of total population

Table 2

CIVILIAN EMPLOYMENT BY SECTORS

AGRICULTURE

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
USA	3.6	3.6	3.5	3.6	3.5	3.3	3.1	3.1	3	2.9	2.9	2.8
JAPAN	11.2	10.4	10	9.7	9.3	8.9	8.8	8.5	8.3	7.9	7.6	7.2
AUSTRIA	10.7	10.5	10.3	10	9.9	9.4	9	8.7	8.6	8.1	8	7.9
SPAIN	20	19.3	18.8	18.6	18.7	18.5	18.3	16.2	15.1	14.4	13	11.8
GREECE	30.8	303	30.7	28.9	29.9	29.4	28.9	28.5	27	26.6	25.3	24.5
TURKEY	55.1	54.9	54.4	54.1	53.6	53.1	52.7	51.8	51	48.3	49.2	47.8
EUROPE	14	13.5	13.4	13.2	13.2	13	12.8	12.4	12.1	11.9	11.6	11.2
OECD	9.9	9.6	9.4	9.3	9.2	8.8	8.6	8.4	8.2	7.9	7.7	7.5

As percentage of total employment

Table 3

INDUSTRY

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
USA	31.3	30.5	30.1	28.4	28	28.5	28	27.7	27.1	26.9	26.7	26.2
JAPAN	34.9	35.3	35.3	34.9	34.8	34.8	34.9	34.5	33.8	34.1	34.3	34.1
AUSTRIA	40.5	40.3	40	39.9	38.8	38.1	38.1	37.8	37.7	37.4	37	36.8
SPAIN	36.6	36.1	35.3	34.1	33.5	32.7	31.7	32	32.3	32.5	32.9	33.4
GREECE	30	30.2	29	29.2	28.6	27.8	27.4	28.1	28	27.2	27.5	27.4
TURKEY	19	18.9	19.1	19.2	19.3	19.5	19.6	20.1	20.5	20.6	20.4	19.9
EUROPE	36.2	35.8	35	34.3	33.4	32.7	32.2	31.9	31.6	31.1	31.1	30.9
OECD	34.2	33.8	33.2	32.2	31.6	31.4	31	30.6	30.2	30	29.9	29.6

As percentage of total employment

Table 4

SERVICES

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
USA	65.2	65.9	66.4	68	68.5	68.2	68.8	69.3	69.9	70.2	70.5	70.9
JAPAN	53.9	54.2	54.7	55.4	56	56.3	56.4	57.1	57.9	58	58.2	58.7
AUSTRIA	48.8	49.3	49.8	50	51.3	52.4	52.9	53.6	53.7	54.6	55.1	55.3
SPAIN	43.4	44.6	45.9	47.3	47.8	48.8	49.9	51.9	52.5	53.1	54	54.8
GREECE	39.2	39.5	40.4	42	41.5	42.8	43.7	43.4	45	46.2	47.1	48.2
TURKEY	25.9	26.2	26.5	26.7	27.1	27.4	27.7	28.1	28.5	31	30.3	32.3
EUROPE	49.8	50.6	51.6	52.5	53.3	54.3	55	55.7	56.3	57	57.3	57.9
OECD	55.9	56.6	57.4	58.5	59.2	59.7	60.3	61	61.7	62.1	62.4	62.9

As percentage of total employment

Table 5

SECTORAL DISTRIBUTION OF TURKISH EMPLOYEMENT

CENSUS YEAR	AGRICULTURE	INDUSTRY	SERVICES
1965	71.9	7.9	20.2
1970	70.2	10.2	19.6
1975	65.1	11.5	23.4
1980	62.5	11.6	25.9
1985	58.8	12.9	28.3
1990	49.3	15.5	35.2

Source: STATE INSTITUTE OF STATISTICS percentages

Table 6

TURKISH POPULATION STRUCTURE

YEAR	TOTAL POPULATION	URBAN POPULATION	SHARE IN POPULATION	RURAL POPULATION	SHARE IN POPULATION
1927	13,648,270	3,305,879	0.242	10,342,391	0.758
1935	16,158,018	3,802,642	0.235	12,355,376	0.765
1940	17,820,950	4,346,249	0.244	13,474,701	0.756
1945	18,790,174	4,687,102	0.249	14,103,072	0.751
1950	20,947,188	5,244,337	0.25	15,702,851	0.75
1955	24,064,763	6,927,343	0.288	17,137,420	0.712
1960	27,754,820	8,859,731	0.319	18,895,089	0.681
1965	31,391,421	10,805,817	0.344	20,585,604	0.656
1970	35,605,176	13,691,101	0.385	21,914,075	0.615
1975	40,347,719	16,869,068	0.418	23,478,651	0.582
1980	44,736,957	19,645,007	0.439	25,091,950	0.561
1985	50,664,458	26,865,757	0.53	23,798,701	0.47
1990	56,473,035	33,326,351	0.59	23,146,684	0.41

Source: STATE INSTITUTE OF STATISTICS

Table 7

COLLECTIVE BARGAIN AGREEMENTS AND NUMBER OF WORKERS IN THE AGREEMENTS

YEARS	NUMBER OF COLLECTIVE BARGAIN AGREEMENTS	NUMBER OF WORKERS IN THE AGREEMENTS *	LABOR FORCE IN SERVICES AND INDUSTRY *	% OF LABOR IN SERVICES AND INDUSTRY IN THE AGREEMENTS
1970	1516	551	4057	14 %
1971	1443	343	4246	8 %
1972	1603	426	4448	10 %
1973	1921	443	4678	9 %
1974	1724	602	4896	12 %
1975	1893	300	5133	6 %
1976	2408	476	5464	9 %
1977	2173	590	5575	11 %
1978	2225	484	6249	8 %
1979	2914	314	6237	5 %
1980	1813	330	6230	5 %
1981	647	466	6432	7 %
1982	3221	1170	6606	18 %
1983	991	261	6797	4 %
1984	1185	340	7044	5 %
1985	2721	920	7265	13 %
1986	2667	707	7636	9 %
1987	2343	923	7995	12 %
1988	2454	629	9348	7 %
1989	2725	829	9380	9 %
1990	1954	484	10034	5 %

Source: Ministry of Labor and Social Security

* : thousands

Table 8

PRODUCTIVITY IN THE SECTORS

	1983	1984	1985	1986	1987	1988	1989	1990
PRODUCTIVITY IN MANUFACTURING (1)	5046342	5350618	5520707	5798733	6035380	6764587	5648015	6051069
PRODUCTIVITY IN AGRICULTURE (2)	1561230	1558395	1537077	1598085	1593462	1533613	1460113	1547297
PROD. OF MANUF./PROD. OF AGRI. (1)/(2)	**2.232**	**3.4334**	**3.59169**	**3.6885**	**3.7875**	**4.4109**	**3.868**	**3.9107**

1987 constant prices

Source: STATE INSTITUTE STATISTICS

Table 9

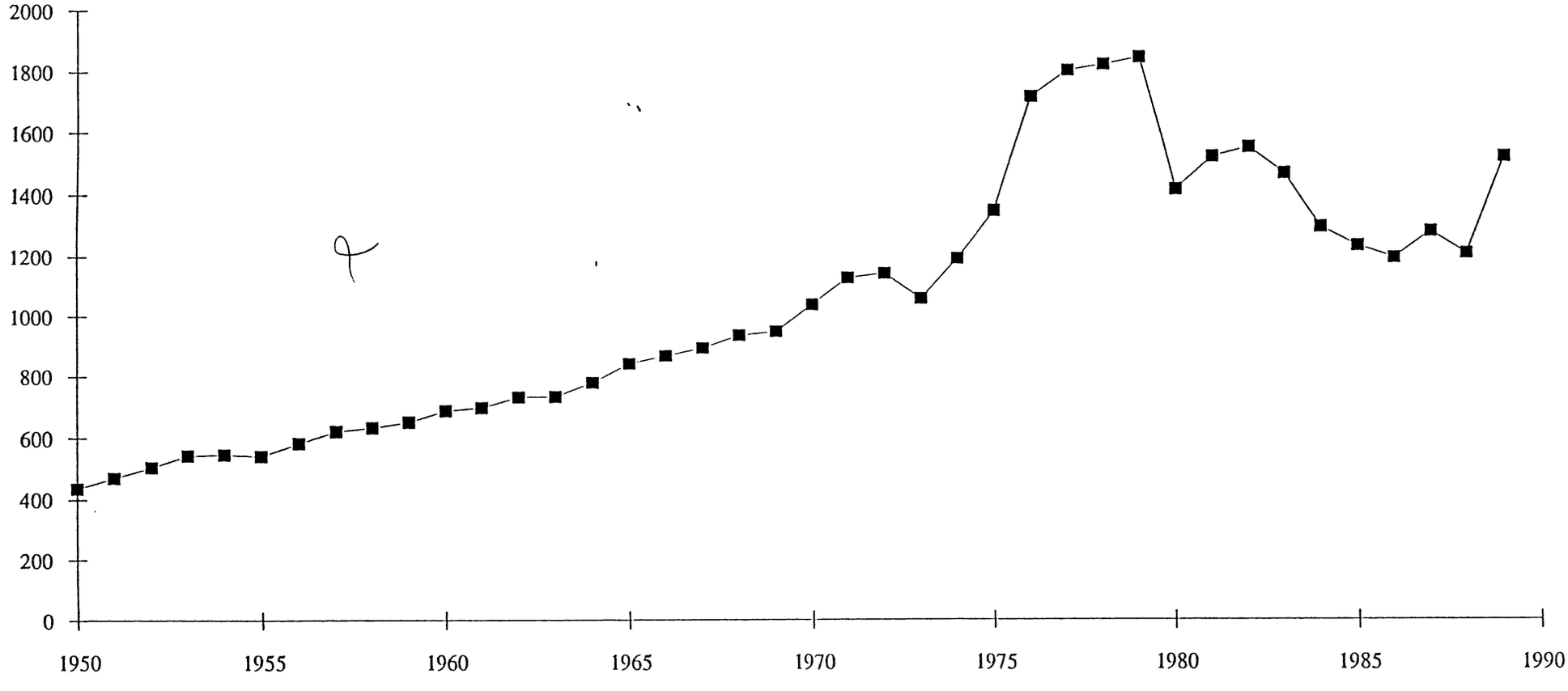
NOMINAL AND REAL WAGES
AND THE CONSUMER PRICE INDEX

YEAR	NOMINAL WAGES	REAL WAGES *
1950	121	436
1951	131	471
1952	148	506
1953	165	544
1954	182	548
1955	202	542
1956	239	583
1957	285	622
1958	336	633
1959	430	652
1960	478	688
1961	493	699
1962	534	733
1963	578	735
1964	623	782
1965	712	845
1966	775	871
1967	865	897
1968	940	940
1969	1,028	954
1970	1,217	1,044
1971	1,539	1,134
1972	1,772	1,148
1973	1,902	1,063
1974	2,544	1,198
1975	3,443	1,354
1976	5,091	1,720
1977	6,844	1,807
1978	10,191	1,828
1979	16,179	1,851
1980	26,799	1,422
1981	38,480	1,525
1982	47,868	1,556
1983	59,489	1,472
1984	78,168	1,303
1985	107,898	1,241
1986	140,763	1,202
1987	209,428	1,288
1988	343,299	1,216
1989	702,926	1,525

Source: BULUTAY, 1992 * : at 1968 prices

Table 10

REAL WAGES



Graph 1

WAGES AND VALUE ADDED BY DIFFERENT FIRM SIZES IN MANUFACTURING

FIRM SIZE	WAGES	VALUE ADDED	WAGES	VALUE ADDED	WAGES	VALUE ADDED	WAGES	VALUE ADDED	WAGES	VALUE ADDED	WAGES	VALUE ADDED
	1983		1984		1985		1986		1987		1988	
10-24	100	100	100	100	100	100	100	100	100	100	100	100
25-49	132	128	130	159	135	144	131	148	123	134	125	127
50-99	168	157	169	170	173	167	161	284	152	165	158	174
100-199	209	227	207	226	210	214	199	240	181	220	184	205
200-499	258	287	240	261	260	294	238	345	223	258	228	256
500-999	277	269	267	262	265	304	267	346	245	316	244	348
1000+	302	299	282	291	274	308	270	406	256	320	265	391

Source: STATE INSTITUTE OF STATISTICS

Table 11

DEVELOPMENTS IN THE TURKISH LABOR MARKET

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
CIVILIAN LABOUR FORCE	15158.2	15387.6	15619.2	15958.6	16306.3	16662.3	17024	17394.5	17703.1	18026.5	18350	19661	19745	20145	20073
CIVILIAN EMPLOYEMENT	13975	13889.6	13812.5	14105.5	14392.8	14648.6	15018.6	15360.2	15842.5	16316.1	16550	18013	18047	18669	18462
UNEMPLOYED	1182.3	1498.1	1806.6	1853.1	1913.4	2013.7	2005.5	2034.3	1865.6	1710.4	1800	1648	1698	1476	1611
UNEMPLOYEMENT RATE	7.8	9.7	11.6	11.6	11.7	12.1	11.8	11.7	10.5	9.5	9.8	8.4	8.6	7.3	8
UNDEREMPLOYEMENT RATE	-	-	-	-	-	-	-	-	-	-	-	7.5	5.7	7.3	7.9
CIVILIAN EMPLOYEMENT BY SECTOR															
AGRICULTURE	7729.8	7653.1	7583.1	7673.4	7786.5	7851.6	7974.9	8094.8	8206.4	8321.2	8369	8606	8845	8954	8077
INDUSTRY	1979.1	1937	1911.7	1995.6	2052	2116.6	2204.4	2270.9	2388.4	2494.1	2512	2706	2591	2927	2795
Mining	177.9	181.7	183.4	190	190.3	188.4	191.6	202.3	216.3	218.9	214	211	171	137	139
Manufacturing	1712.8	1662.6	1631.3	1705.3	1757.8	1820.8	1901.6	1953.7	2052.1	2151.2	2170	2473	2380	2775	2638
Electricity, Gas and Water	88.4	92.6	97	100.4	103.8	107.4	111.2	115	120	124	128	22	40	15	18
SERVICES	4267	4299.4	4317.7	4436.5	4554.3	4680.3	4839.3	4994.5	5247.7	5500.8	5669	6701	6611	6788	7590
Construction	669.6	695.2	700.4	703.2	706.4	710.3	723.4	742.7	798.4	847.4	866	884	841	865	943
Transportation	1290.6	1270.9	1250.2	1297.9	1334.2	1380.6	1440.1	1492.5	1574.7	1658.1	1692	828	767	780	885
Commerce	537.5	528.1	515.2	526.4	532.3	541.2	562.8	580.5	604	628	640	2004	2015	2125	2252
Financial Institutions	291.4	298.5	302.9	307.7	311.7	324.5	336.4	346.1	356.5	367	381	417	389	411	469
Other Services	1478	1506.6	1549	1601.4	1669.7	1723.8	1776.6	1832.7	1914.2	2000.4	2090	2568	2599	2607	3041
TOTAL	**13975.9**	**13889.6**	**13812.5**	**14105.5**	**14392.8**	**14648.6**	**15018.6**	**15360.2**	**15842.5**	**16316.1**	**16550**	**18013**	**18047**	**18669**	**18462**

+15 years old

Source: STATE PLANNING ORGANIZATION

Table 12

UNEMPLOYMENT RATES OF SOME OECD COUNTRIES

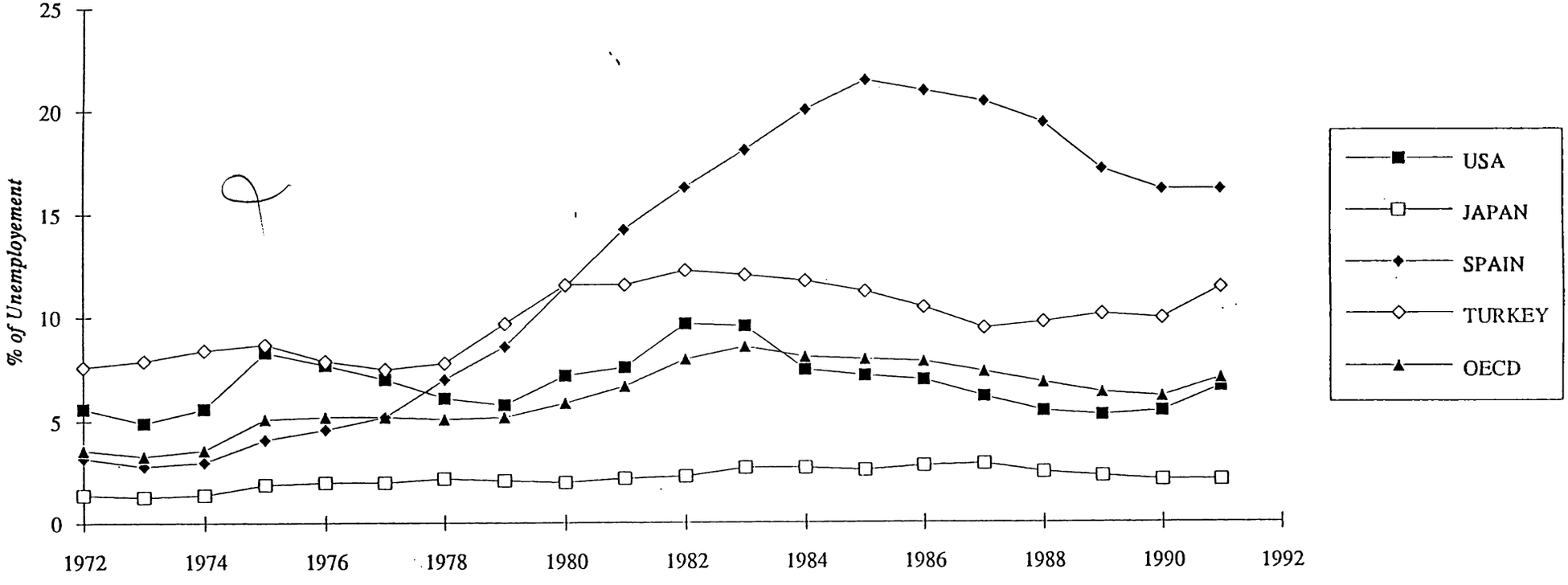
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
USA	5.6	4.9	5.6	8.3	7.7	7	6.1	5.8	7.2	7.6	9.7	9.6	7.5	7.2	7	6.2	5.5	5.3	5.5	6.7
JAPAN	1.4	1.3	1.4	1.9	2	2	2.2	2.1	2	2.2	2.3	2.7	2.7	2.6	2.8	2.9	2.5	2.3	2.1	2.1
GERMANY	0.7	0.6	1.3	3.1	3.2	3.3	3.1	2.9	2.5	3.4	5	6.6	7.1	7.1	6.4	6.2	6.2	5.6	4.9	4.3
AUSTRIA	1	1	1.2	1.5	1.6	1.4	1.8	1.8	1.6	2.2	3.1	3.7	3.8	3.6	3.1	3.8	3.6	3.1	3.3	3.7
BELGIUM	2.3	2.4	2.5	4.5	5.9	6.7	7.2	7.5	7.9	10.2	11.9	13.2	13.2	12.3	11.6	11.3	10.3	9.3	8.7	9.3
FRANCE	2.8	2.7	2.9	4.2	4.5	5	5.3	6	6.3	7.5	8.2	8.4	8.8	10.2	10.4	10.5	10	9.4	8.9	9.4
GREECE	2.1	2	2.1	2.3	1.9	1.7	1.8	1.9	2.8	4	5.8	7.9	8.1	7.8	7.4	7.4	7.6	7.4	7	8.2
ITALY	6.4	6.4	5.4	5.9	6.7	7.2	7.3	7.8	7.7	8.5	9.2	10	10.1	10.2	11.2	12.1	12.2	12.1	11.1	11
PORTUGAL	2.1	2.2	1.9	3.5	5.8	7.1	7.9	8.2	8	7.7	7.5	7.9	8.6	8.7	8.6	7.1	5.7	5	4.7	4.1
SPAIN	3.2	2.8	3	4.1	4.6	5.2	7	8.6	11.5	14.3	16.4	18.2	20.1	21.5	21	20.5	19.5	17.3	16.3	16.3
TURKEY	7.6	7.9	8.4	8.7	7.9	7.5	7.8	9.7	11.6	11.6	12.3	12.1	11.8	11.3	10.5	9.5	9.8	10.2	10	11.5
OECD EUROPE	3.2	3	3.1	4.2	4.7	5	5.3	5.6	6.3	7.6	8.8	9.7	10.1	10.2	10.1	9.8	9.2	8.5	8	8.7
OECD	3.6	3.3	3.6	5.1	5.2	5.2	5.1	5.2	5.9	6.7	8	8.6	8.1	8	7.9	7.4	6.9	6.4	6.2	7.1

Source: OECD ECONOMIC OUTLOOK, 51

as percentage of total labor force

Table 13

Unemployement Rates of Some Countries



Graph 2

ECONOMIC ACTIVITY AND PERIOD	DURATION OF UNMPLOYMENT								
	TOTAL	1-2 months	3-5 months	6-8 months	9-11 months	1-2 years	2-3 years	3 or more	found a job, but waiting to start
1988-OCTOBER	1.708.737	204.242	241.152	251.657	153.909	416.668	221.721	189.511	29.877
1989-APRIL	1.778.123	190.467	263.348	410.883	168,566	363.539	213.040	138.870	29.410
1989-OCTOBER	1.802.411	282.268	326.143	316.746	141.550	358.396	222.017	115.225	40.066
1990-APRIL	1.764.048	143.228	247.600	317.540	214.862	432.915	208,508	159,791	39.604
1990-OCTOBER	1.571.721	201.329	298.577	225.871	88.394	357.114	210.097	136,463	53.876
AGRICULTURE									
1988-OCTOBER	41.869	4.883	8.584	8.523	2.602	8.197	2.984	5.356	740
1989-APRIL	99,527	4,449	19.517	56.185	5,763	10.482	3,131	-	-
1989-OCTOBER	194,893	51,829	52.303	46.020	13.928	19.067	8.096	2,866	784
1990-APRIL	133.935	8,825	28.317	40.130	17.964	12.269	10,994	14,604	832
1990-OCTOBER	134,420	20.256	37.020	19.040	4,082	25.014	15.872	11.707	1,429
INDUSTRY									
1988-OCTOBER	95.544	23.987	19.328	16.547	7.830	16.014	3,306	6.031	2.501
1989-APRIL	166,178	37.744	33.860	46.436	15.795	15.417	11.343	3.939	1.644
1989-OCTOBER	198.678	40,268	32.252	32.861	20,203	37,663	18,898	11,179	5,354
1990-APRIL	191,148	23.837	36.152	30.830	15,620	42,968	20,089	14,192	7,460
1990-OCTOBER	177.378	36.143	42.345	24.732	8.164	33.572	14.209	10,229	7.984
SERVICES									
1988-OCTOBER	242.922	54.478	48.961	31.695	20.308	46.535	21.590	13.003	6.352
1989-APRIL	324.727	67.331	73.225	83,551	20,407	43.907	18.119	1,520	16.667
1989-OCTOBER	396,462	94,322	81.866	79.848	17,855	54,649	33,609	22,124	12,189
1990-APRIL	411,688	47,414	59,489	93,594	45,876	94,173	29,744	25,568	15,830
1990-OCTOBER	441,470	63,536	89.603	56.914	20.198	99.368	43.928	44.026	23.897
LEFT THE JOB 3 YRS AGO									
1988-OCTOBER	216,340	18.776	19.356	24.926	21.148	46.685	28.037	55.747	1.665
1989-APRIL	206.527	7.590	13.727	34.950	18.267	41.816	41.643	46.464	2.070
SEEKING A JOB FIRST TIME									
1988-OCTOBER	1.112.062	102.118	144.923	169.966	102.021	299.237	165.804	109.374	18.619
1989-APRIL	981.164	73.353	123.019	189.761	108.334	251.917	138.804	86.947	9.029
1989-OCTOBER	1.012.378	95.849	159.722	158.017	89.564	247.017	161.414	79.056	21.739
1990-APRIL	1.027.277	63.152	123.642	152.986	135.402	283.505	147.681	105.427	15.482
1990-OCTOBER	818.453	81.394	129.609	125.185	55.950	199.160	136.088	70.501	20.566

Source: STATE INSTITUTE OF STATISTICS

Table 14

PART-TIME WORKING IN SOME OECD COUNTRIES

	UNEMPLOYMENT RATES BOTH SEXES		WOMEN UNEMP. % of total women labor force		MEN UNEMP. % of total women labor force		PART TIME EMPLOYMENT AS % OF TOTAL EMPLOYMENT						FEMALE PART-TIME EMPLOYMENT % OF TOTAL PART-TIME WORKERS	
							BOTH SEXES		WOMEN		MEN			
	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980
AUSTRALIA	6.9	5.9	7.1	7.4	6.8	4.9	21.3	16.4	40.1	35.7	8	5.2	78.1	79.7
AUSTRIA	3.2	1.9	3.5	2.8	3	1.3	9	7.6	20.2	18.3	1.6	1.3	89.1	89.1
BELGIUM	8.7	7.9	12.8	13.5	5.9	4.6	10.2	6	25	16.5	1.7	1	89.6	88.9
CANADA	8.1	7.1	8.1	8.1	8	6.8	15.4	13	24.4	23.8	8.1	5.9	71	72.6
DENMARK	8.3	6	8.9	8.3	7.7	4.2	23.4	22.7	40.1	46.3	9.4	5.2	78	86.9
FRANCE	9	6.3	12	9.4	6.7	4.2	12	8.3	23.8	17.1	3.5	2.4	83.1	82.1
GERMANY	6.2	3.2	7.4	4.3	5.4	2.5	13.4	11.4	30.7	27.6	2.3	1.5	89.6	91.6
GREECE	7.5	2.8	12.3	4.1	4.6	2.2	4.4	3.3	8	6.6	2.4	1.8	64.4	62.4
ITALY	10.8	7.5	17	13	7.2	4.7	5.7	5.3	10.9	10.6	3.1	3	64.7	61.4
JAPAN	2.1	2	2.2	2	2	2	19.2	15.7	33.4	28.6	9.5	7.5	70.7	70.6
NETHERLANDS	7.5	0.7	1.7	1.2	0.9	0.5	33.2	16.6	61.7	44	15.8	5.5	70.4	76.4
PORTUGAL	4.6	7.7	6.6	13.3	3.1	4	5.9	7.3	10	14.7	3.1	2.6	69.8	77.9
SWITZERLAND	0.5	0.2	0.6	0.3	0.5	0.1	23.2	24.2	40.5	46.2	7.3	5.9	83.7	86.8
UK	5.5	5.6	3.3	4.2	7.1	6.6	21.7	16.4	43.6	39	5	1.9	87	92.8
USA	5.4	7	5.4	7.4	5.4	6.7	16.9	16.9	25.2	26.8	10	9.6	67.6	67.3

Source: OECD In Figures, 1992

Table 15

THE DISTRIBUTION OF PART-TIME WORKERS ACCORDING TO AGE GROUPS

	12-24	25-49	50-64	Over 65
BELGIUM	65	230	39	6
DENMARK	150	324	120	20
GERMANY	218	2302	786	132
FRANCE	496	1458	518	69
ITALY	176	547	243	85
PORTUGAL	47	109	66	34
UK	740	3024	1221	272

EEC, Labor Force Survey, 1992 thousands

Table 16

THE SECTORAL DISTRIBUTION OF PART-TIME WORKERS

	AGRICULTURE	INDUSTRY	SERVICE
BELGIUM	1.2	3.1	15.2
DENMARK	22	9.9	33.1
GERMANY	9	6.2	19.4
FRANCE	13.6	5.8	17.2
ITALY	19.6	2.9	4.1
PORTUGAL	10.5	1.7	5.1
UK	18.6	7.9	32.5

EEC, Labor Force Survey, 1992 percentages

Table 17

CAPITAL INVESTMENTS IN TURKEY

YEARS	TOTAL CAPITAL INVESTMENT	PUBLIC SECTOR CAPITAL INVESTMENT		PRIVATE SECTOR CAPITAL INVESTMENT	
	TL	TL	%	TL	%
1973	53.4	25.1	47%	29.0	54%
1974	73.0	35.0	48%	38.0	52%
1975	106.7	53.8	50%	52.9	50%
1976	146.0	75.2	52%	70.8	48%
1977	195.0	108.0	55%	87.0	45%
1978	280.0	135.0	48%	145.0	52%
1979	479.0	238.0	50%	241.0	50%
1980 *	17,774.3	10,865.1	61%	6,909.1	39%
1981 *	17,872.2	11,558.4	65%	6,313.8	35%
1982 *	17,542.7	10,921.0	62%	6,620.9	38%
1983 *	17,886.9	10,990.9	61%	6,896.0	39%
1984 *	17,951.0	10,473.5	58%	7,477.6	42%
1985 *	20,982.3	12,892.9	61%	8,089.3	39%
1986 *	23,281.3	13,864.2	60%	9,417.1	40%
1987 *	24,560.3	13,394.3	55%	11,166.0	45%
1988 *	24,165.9	11,510.3	48%	12,655.5	52%
1989 *	23,335.5	10,333.1	44%	13,002.4	56%
1990 *	27,260.9	11,636.6	43%	15,624.3	57%
1991 *	27,014.0	11,986.0	44%	15,028.0	56%
1992 *	27,355.0	12,118.0	44%	15,238.0	56%
1993 **	28,243.0	11,974.0	42%	16,269.0	58%

Source: STATE PLANNING ORGANIZATION

** : with 1988 prices*

** : program

Table 18

THE RATIO OF CAPITAL INVESTMENTS TO GNP

1980	26.7
1981	25.8
1982	24.2
1983	23.9
1984	22.6
1985	25.2
1986	25.8
1987	25.4
1988	24.1
1989	22.9
1990	24.4
1991	23.8

Source: STATE PLANNING ORGANIZATION

Table 19

DATA USED IN THE REGRESSIONS (1980-1990)

YEARS	UNEMPLOYMENT	INFLATION	ENERGY	GNP	REAL WAGES	CREDITS	M1	INVINCEN	FAINVEST	LABFORCE
1980	1,807.0	50.0	17,252.0	50,678,684.6	71.3	644.3	469.3	138,017.3	11,849.5	16,120.0
1981	1,853.0	35.0	18,181.0	53,377,284.3	91.3	1,158.4	720.0	774,832.6	13,238.7	16,458.0
1982	1,914.0	27.0	18,172.0	55,371,268.5	123.8	1,693.7	1,055.0	404,171.7	13,813.1	16,806.0
1983	2,014.0	30.5	20,772.0	57,900,633.7	166.5	2,180.5	1,596.2	437,713.4	13,706.4	17,163.0
1984	2,005.0	50.3	21,974.0	62,401,389.2	234.3	2,451.2	1,628.5	735,345.3	11,943.4	17,524.0
1985	2,034.0	43.2	23,355.0	65,189,061.6	324.3	4,339.3	2,388.3	2,466,074.0	14,652.4	17,894.0
1986	1,866.0	29.6	24,846.0	70,092,365.2	445.5	8,564.8	4,133.8	3,957,834.1	17,964.0	18,208.0
1987	1,710.0	32.0	27,310.0	76,612,982.6	660.8	13,256.7	6,577.5	5,174,528.0	18,606.3	18,526.0
1988	1,800.0	68.3	28,015.0	77,799,909.9	1,074.5	15,154.7	6,721.0	6,924,175.3	14,358.8	20,174.0
1989	1,800.0	69.6	27,858.0	78,469,361.5	2,062.3	24,553.2	11,533.1	11,424,653.3	13,759.1	20,639.0
1990	1,693.0	53.1	28,685.0	86,208,381.8	3,768.8	47,425.6	20,508.6	14,816,253.4	17,646.0	21,177.0

Table 20

REGRESSION RESULTS FOR IDENTIFICATION OF AUTOCORRELATION

	CORRELATION COEFFICIENT	R-SQR	T-VALUE OF THE SLOPE COEFFICIENT
1 LAG	0.674006	45.43%	2.73717
2 LAG	0.135752	1.84%	0.41106
3 LAG	-0.0126381	0.02%	-0.0379172
4 LAG	-0.354842	12.59%	-1.13862
5 LAG	-0.480112	23.05%	-1.64195
6 LAG	-0.4134	17.09%	-1.36204
7 LAG	-0.254804	6.49%	-0.790504
8 LAG	0.0988504	0.98%	0.298011
9 LAG	0.263547	6.95%	0.819619
10 LAG	0.411784	16.96%	1.35562

Degrees of freedom = 10

t-value (alpha=0.05) =2.228

Table 21

REGRESSION RESULTS

	COEFFICIENT	STD ERROR	T-VALUE
CONSTANT	1339 544831	215.44137	6.2177
UNEMP1LAG	0.586539	0.119889	4.8923
FAREAL	-0.037996	0.00796	-4.7731

t (0.05, 8) = 2.306

R-SQ (ADJ.) =	0.7698	RESIDUAL AVERAGE =	2.89E-13
SE =	56.079324	RESIDUAL VARIANCE =	3144.89
MAE =	40.337116	RESIDUAL STD ERROR =	56.0793

REGRESSION RESULTS

OBSERVATION NUMBER	OBSERVED VALUES	FITTED VALUES	RESIDUALS
1	1807	1764.43	42.5735
2	1853	1896.4	-43.4036
3	1914	1901.56	12.4436
4	2014	1941.39	72.6101
5	2005	2067.03	-62.0304
6	2034	1958.82	75.1798
7	1866	1850.01	15.9948
8	1710	1727.06	-17.061
9	1800	1796.95	3.05321
10	1800	1872.52	-72.522
11	1693	1724.84	-26.8371

0 residuals beyond 3 sigma

Table 22

DATA USED IN THE REGRESSIONS (1970-1992)

YEARS	UNEMPLEVEL (1)	LOG(UNEMPLEVEL)	GNP (2)	EMPLOYMENT (3)	LOG(PRODUCTIVITY)	INFLATION	LOG(INFLATION)	Epi/Ipi (4)	LOG(Epi/Ipi)	REALWAGES (5)	LOG(R. WAGES)
1960	376.2	2.575418791	70.87	12483.1	0.754139983	6.45	0.809559715	na	na	688	2.837588438
1961	418.7	2.621902961	72.29	12626.2	0.75780556	7.5	0.875061263	na	na	699	2.844477176
1962	412.4	2.615318657	76.75	12752	0.77950008	9.49	0.977266212	na	na	733	2.865103975
1963	426.1	2.629511534	84.19	12893.9	0.814876212	5.74	0.758911892	na	na	735	2.866287339
1964	449.4	2.652633068	87.62	13098.6	0.825378369	2.57	0.409933123	na	na	782	2.893206753
1965	470.1	2.672190251	90.37	13280.5	0.832809856	4.33	0.636487896	na	na	845	2.926856709
1966	478.6	2.679972694	101.2	13531.7	0.873828152	6.39	0.805500858	na	na	871	2.940018155
1967	645.1	2.809627042	105.46	13700.8	0.88634184	6.52	0.814247596	na	na	897	2.952792443
1968	718	2.856124444	112.49	13917.5	0.907552687	3.92	0.593286067	na	na	940	2.973127854
1969	828.6	2.918344929	118.59	14058.4	0.926112173	5.31	0.725094521	na	na	954	2.979548375
1970	920.6	2.964070971	125.43	14284.2	0.9435455	11.88	1.074816441	100	2	1044	3.018700499
1971	994.2	2.997473759	138.19	14535.1	0.978058593	18.29	1.262213705	100.8	2.003460532	1134	3.054613055
1972	947.5	2.976579219	148.48	14931.1	0.997576155	16.37	1.214048679	107.2	2.030194785	1148	3.059941888
1973	1042.2	3.017951069	156.5	15199.8	1.012676468	22.07	1.343802333	109.9	2.040997692	1063	3.026533265
1974	1149.6	3.060546755	168.01	15503.2	1.034913782	28.41	1.453471234	87.4	1.941511433	1198	3.078456818
1975	1212.8	3.083789188	181.38	15686.9	1.06305227	16.2	1.209515015	78.5	1.894869657	1354	3.131618664
1976	1469.9	3.16728779	195.75	15896.2	1.090408452	16.74	1.223755454	84.5	1.926856709	1720	3.235528447
1977	1724.2	3.236587641	203.36	16394	1.093580602	24.48	1.388811413	79.4	1.899820502	1807	3.256958153
1978	1758.7	3.245191764	209.18	16608.9	1.100179288	43.75	1.640978057	81.1	1.909020854	1828	3.261976191
1979	1545.9	3.189181397	208.34	16847.4	1.092239773	71.1	1.851869601	64.3	1.808210973	1851	3.267406419
1980	1453.1	3.162295503	206.12	17051.6	1.082354997	103.81	2.016239191	57.5	1.759667845	1422	3.152899596
1981	1275.9	3.105816637	214.67	17188	1.096546011	41.88	1.622006673	54.9	1.739572344	1525	3.183269844
1982	1266.9	3.102742336	224.43	17094.3	1.118229588	27.49	1.43917474	48.5	1.685741739	1556	3.192009593
1983	1419.2	3.152043602	231.86	17254	1.128336038	28.01	1.447313109	51.5	1.711807229	1472	3.16790781
1984	1419	3.151982395	245.65	17500.8	1.147258867	50.13	1.700097705	54.3	1.73479983	1303	3.114944416
1985	1345.6	3.128915978	258.19	17776.5	1.16209316	43.93	1.642761203	56.2	1.749736316	1241	3.093771781
1986	1534.3	3.185910285	279.12	18082.8	1.188525278	31.01	1.491501766	55	1.740362689	1202	3.079904468
1987	1660.6	3.220265034	300.01	18466.7	1.210746437	38.4	1.584331224	53.2	1.725911632	1288	3.109915863
1988	1708.7	3.232665819	310.91	18908	1.215989097	65.72	1.817697555	50.7	1.705007959	1216	3.084933575
1989	1648	3.216957207	316.26	20376	1.190925335	66.82	1.824906471	51.5	1.711807229	1525	3.183269844
1990	1698.2	3.229988837	322.4	20405	1.198658434	71.5	1.854306042	50.7	1.705007959	1754	3.244029589
1991	1750.6	3.243186924	328.6	21027	1.193890244	76.8	1.88536122	49.6	1.695481676	2139	3.330210785
1992	1860.5	3.269629674	335.3	20820	1.206952828	65.4	1.815577748	50.5	1.703291378	2352	3.371437317

(1) thousands
UYGUR 1990

(2) billions,1968
SIS
Statistical yearbook

(3) thousands
SIS
Statistical yearbook

SIS
Statistical yearbook

(4) Export Price Index / Import Price Index
TR T. AND CUSTOMS MINISTRY
ECONOMIC REPORT

(5) BULUTAY, 1992
1968 prices

Table 23

REGRESSION RESULTS

DEPENDENT VARIABLE : UNEMPLEVEL

	COEFFICIENT	STD ERROR	T-VALUE
CONSTANT	0.234921	0.442458	0.5309
LOG(PRODUCTIVITY)	1.011347	0.17918	5.6443
LOG(INFLATION)	0.064716	0.038949	1.6615
LOG(EPI/IPI)	0.281804	0.118848	2.3711
LOG(R. WAGES)	0.371363	0.080884	4.5913

t (0.05,18)= 2.101

R-SQ (ADJ.) =	0.8876	RESIDUAL AVERAGE =	6.37E-16
SE =	0.030941	RESIDUAL VARIANCE =	9.57E-04
MAE=	0.022256	RESIDUAL STD ERROR =	0.0309408
Durbin-Watson=	1.105	*0 residuals beyond 3 sigma*	

Table 24

REGRESSION RESULTS

DEPENDENT VARIABLE : UNEMPLEVEL

	COEFFICIENT	STD ERROR	T-VALUE
LOG(PRODUCTIVITY)	1.136581	0.12712	8.941
LOG(EPI/IPI)	0.281799	0.056301	5.0053
LOG(R. WAGES)	0.433532	0.070013	6.1922

t (0.05,20)= 2.086

SE=	0.031884	RESIDUAL AVERAGE =	6.53E-05
MAE =	0.024021	RESIDUAL VARIANCE =	1.02E-03
		RESIDUAL STD ERROR =	0.0318844

0 residuals beyond 3 sigma

Table 25

REGRESSION RESULTS

DEPENDENT VARIABLE : UNEMPRATE

	COEFFICIENT	STD ERROR	T-VALUE
CONSTANT	-54.235948	16.7633	-4.2494
LOG(PRODUCTIVITY)	10.488273	5.108698	2.1292
LOG(INFLATION)	0.461018	1.123545	0.4103
LOG(EPI/IPI)	18.815203	3.428332	2.4882
LOG(R. WAGES)	0.177698	2.333197	0.0762

t (0.05,18)= 2.101

R-SQ (ADJ.) =	0.5442	**RESIDUAL AVERAGE =**	2.22E-14
SE =	1.19253	**RESIDUAL VARIANCE =**	7.97E-01
MAE=	0.877403	**RESIDUAL STD ERROR =**	0.89253
Durbin-Watson=	0.810763	***0 residuals beyond 3 sigma***	

Table 26

REGRESSION RESULTS

DEPENDENT VARIABLE : UNEMPRATE

	COEFFICIENT	STD ERROR	T-VALUE
CONSTANT	-55.929118	10.562961	-5.2949
LOG(PRODUCTIVITY)	10.017999	4.782753	2.0946
LOG(EPI/IPI)	19.330031	3.069822	6.2968

t (0.05,20)= 2.086

R-SQ (ADJ.) =	0.6036	**RESIDUAL AVERAGE =**	2.26E-14
SE =	0.851543	**RESIDUAL VARIANCE =**	7.25E-01
MAE=	0.661799	**RESIDUAL STD ERROR =**	0.851543
Durbin-Watson=	0.833	***0 residuals beyond 3 sigma***	

Table 27